Power of a Power- $(x^m)^n = x^{mn}$

Power of a Product- $(xy)^n = x^n y^n$

Powers of -1 =

Even powers of -1 are = to 1

Odd powers of -1 are = to -1

$(-1)^2$
$-1 \cdot -1 = 1$
$-1 \cdot -1 \cdot -1 = -1$
$(-1)^3$

Examples of powers of negative 1:

$(-y)^6 =$ y^6

$(-5x)^3 =$ $-5^3 x^3 = -125x^3$

$(-3y)^4 =$ $-3^4 y^4 = 81y^4$

1) $(6^2)^3 =$ 6^6

2) $(-3b^2)^5 =$ $(-3)^5 b^{10}$

3) $(5j^2k^3)^4 =$ $5^4 j^8 k^{12}$

4) $2(3a^2)^3 =$ $2(3^3 a^6)$
$2(27a^6)$
$54a^6$

5) $(-ab^5)(a^3)^2 =$
$(-1a^1b^5)(a^6)$
$-a^7 b^5$

6) $(5f^3t^7)^3 (d^4f^2)^5 =$
$(5^3 f^9 t^{21})(d^{20} f^{10})$
$125 d^{20} f^{19} t^{21}$

Simplify if a = 4 & b = -3

7) $(-2a)^2$ $(-2 \cdot 4)^2$
$(-8)^2$
64

8) $(4b)^a$
$(4 \cdot -3)^4$
$(-12)^4$
$20{,}736$

9) Find the volume of a cube if the edge is $4x^2y^3$

$V = s^3$
$V = (4x^2y^3)^3$
$V = 64x^6y^9$